



Review of Workplace Wellness Program Options to Reduce Musculoskeletal Disorders in Laborious Work

Minnesota
Department of
Transportation

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Final Report 2011-07

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Final Report

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EXECUTIVE SUMMARY

The primary cause of injury to field workers who perform laborious tasks is over-exertion. Due to changing environmental and situational conditions for field workers, it is difficult to apply engineering controls to reduce exposure to over-exertion or strain that contributes to musculoskeletal disorders (MSDs). One form of administrative control to reduce the potential for MSDs is to improve the overall fitness and physical capability of field workers. Workplace health promotion and wellness programs are meant to provide employees with opportunities to learn about lifestyle changes to improve their overall health and wellness status. The goal of this project was to create a reference guide for the Minnesota Department of Transportation (Mn/DOT) that addresses the different components of a workplace health and wellness promotion program. This document was created based on data gathered through a review of research literature, interviews with non-Minnesota department of transportation safety staff, and an interview with a health promotion and wellness expert in the state of Minnesota. Although most literature and reference material focuses on non-fieldwork populations, health promotion and wellness success factors can be extrapolated to their unique work environment.

Results indicate that to be successful, health promotion and wellness should be considered a process instead of a program or initiative. The World Health Organization defines health promotion as “the process of enabling people to increase control over, and to improve, their health. It moves beyond a focus on individual behavior towards a wide range of social and environmental interventions.” Whereas the State of Minnesota expert indicated, “Health promotion is also (about the) relationships between supervisors and their staff. If the relationship is unhealthy, employees are not driven to give beyond the minimum required and feel dissatisfied by work. This affects their overall sense of wellbeing.” Obviously health promotion and wellness is much more than just stretching or education seminars on diet; it is something that should be integrated into the organizational culture. Analysis of literature review and telephone interviews provided a basic guide on how Mn/DOT should approach health promotion and wellness. First, management commitment and leadership must be established along with involvement of key stakeholders (such as healthcare providers, workers compensation, etc.). Second, a joint management-worker committee needs to be formed to define how health promotion and wellness can be aligned with organizational goals, policies, and measures, and to assess the needs of workers. The committee also requires the guidance of a health promotion and wellness expert. Before implementation, baseline measures of health conditions, worker perceptions, injury/illness and workers compensation data need to be established along with periodic data collection and review to monitor performance and progress. Establishing health promotion and wellness into the culture of the organization, careful planning by a well-represented committee, and evaluation on the performance of the program using a variety of measures, are keys to success. The State of Minnesota expert estimated that employers can expect a 300% to 600% return on investment in properly developed and administered health promotion and wellness programs.

INTRODUCTION

The goal of this project was to create a reference guide for the Minnesota Department of Transportation (Mn/DOT) that addresses the different components of a workplace health and wellness promotion program. This document was created based on data gathered through a review of research literature, interviews with other states department of transportation, and interviews with health insurance providers in the state of Minnesota. This manual includes information on the different types of wellness and health promotion programs, their factors for success, their limitations and issues, as well as the current availability and cost associated with their implementation. This reference guide will assist the Mn/DOT management team to take sound decisions regarding wellness and health promotion initiatives in order to optimize success and minimize cost.

Scope

This project incorporated three different approaches to data gathering. The first part, added later in this introduction, consisted of a literature review of textbooks, professional and well-respected journal articles and publications, and also a few well-known websites. From this literature review, basic terms and definitions were identified and described to present an overview of the fundamental knowledge of workplace health and wellness promotion. A table with all the sources used for this review were organized into a table for easy reference and incorporated to this manual.

The second approach included phone interviews with other department of transportation safety officers. Based on voluntary participation, those interviews helped identify the success and failure factors of past and current workplace health and wellness promotion initiatives. Data about costs of such programs was also gathered.

The third approach consisted of a phone interview with the state of Minnesota expert in wellness and health promotion. The interviewee was asked about current health and wellness options available to the Mn/DOT workforce population. Information regarding costs and the success of past experiences with groups similar to the Mn/DOT field workers was also collected.

Literature Review

As stated earlier, the first portion of this project was to perform an extensive literature review to investigate the field of workplace health and wellness promotion programs. A total of nineteen (19) different sources were found useful and reliable. The primary search engines used throughout this project were the University of Minnesota – Duluth library website and Google. The main objective of this review was to define key terms with regard to health and wellness promotion and review articles and textbooks that investigated workplace wellness and health promotion. Unfortunately, very little has been written on health and wellness promotion for field workers or laborious work and, therefore, none of the sources retained and judged valuable to this project were specific to this type of work. However, all references included in this study were judged constructive and helpful to any individual who wishes to create successful health and wellness promotion initiatives.

Health Risks, Absenteeism, and Work Productivity

In a quasi-experimental before-after intervention-control study conducted in the United Kingdom, researchers have found that a well-implemented health promotion program can decrease absenteeism and health risks factors, but increase significantly work productivity (Mills et al., 2007). Subjects in a multinational corporation were offered a health promotion program incorporating a health risks appraisal questionnaire, access to a customized health improvement web portal, wellness literature, seminars and workshops based upon identified wellness needs. Participants in both the control and intervention group were asked to complete a health risk appraisal questionnaire (HRA) and the World Health Organization health and work performance questionnaire (WHO-HPQ) at the beginning of the experiment and 12 months thereafter. The health risks factors assessed in the HRA questionnaire included high-risk behaviors associated with alcohol, smoking, body weight, physical activity, nutrition, medical health, pain, stress, sleep, job satisfaction, and seat belt usage. This survey was designed specifically for the corporate setting. The WHO-HPQ wasn't used in its entity. Only the 12-item work performance of the questionnaire was used. A copy of the entire document is located in Appendix A. Although the results of this study presented a low response rate, the results and conclusions drawn appear to indicate that a multi-component workplace health promotion program can improve both the health status of employees and their work productivity. Consequently, health promotion initiatives have the potential to provide a significant return on investment for employers.

Barriers, Incentives, and Motivation

In a study conducted by Kruger et al., data from the 2004 HealthStyles Survey was used to assess "employees' attitudes toward potential barriers to and incentives for their likely use of worksite health promotion programs (p.439, 2007)." This volunteer mail survey was sent to adults employed either full or part-time outside the home. The survey collected information from participants related to the following:

- Perceived use of physical activity services;
- Selected barriers to worksite health promotion services; and
- Selected incentives to worksite health promotion.

Data related to body mass index (BMI), demographics, and physical activity level was also gathered. The results indicated that a lack of time during work and a lack of time before or after work were the most commonly reported barriers keeping workers to engage in a worksite health promotion program. On the other hand, the three most reported incentives to participate in a worksite health promotion program were: (1) convenient time, (2) convenient location, and (3) paid time off to participate in such programs. Although not very specific, this study sheds light on worksite health promotion and the need to consider components (e.g. barriers and incentives) that are most likely make such initiative successful. Employers who attempt to design health and wellness promotion programs must consider their own workforce needs-assessment data to ensure participation from the targeted work population.

Another article published by Hall (2008) also provided an overview of the important factors employers must focus on to make the most out of incentive rewards (). The author states that

people usually do not adopt new behavior or attitude unless the reason to do so prevails over the advantages perceived with keeping the previous attitude or behavior. On a financial standpoint, “an optimal incentive program utilizes the simplest, most cost-effective incentives that cause the maximum number of individuals to move from a state of contemplation (i.e. considering change) to action or practicing new behaviors (Hall, 2008, p.13). However, unhealthy behaviors may result from poorly designed incentive programs associated with health promotion and must be well planned and used with caution. Rewards are not only about encouraging healthy behavior change, but also about sustaining it. The author also mentions the legal considerations associated with wellness incentives rewards in regards to the Health Insurance Portability and Accountability Act of 1996 (HIPPA).

Planning Worksite Health Promotion: Models, Methods, and Trends

An article published by Ryan, Chapman, and Rink (2008) suggests the *Wellness Program Development Cycle* (see Figure 1) as a model for planning new worksite health and wellness program.

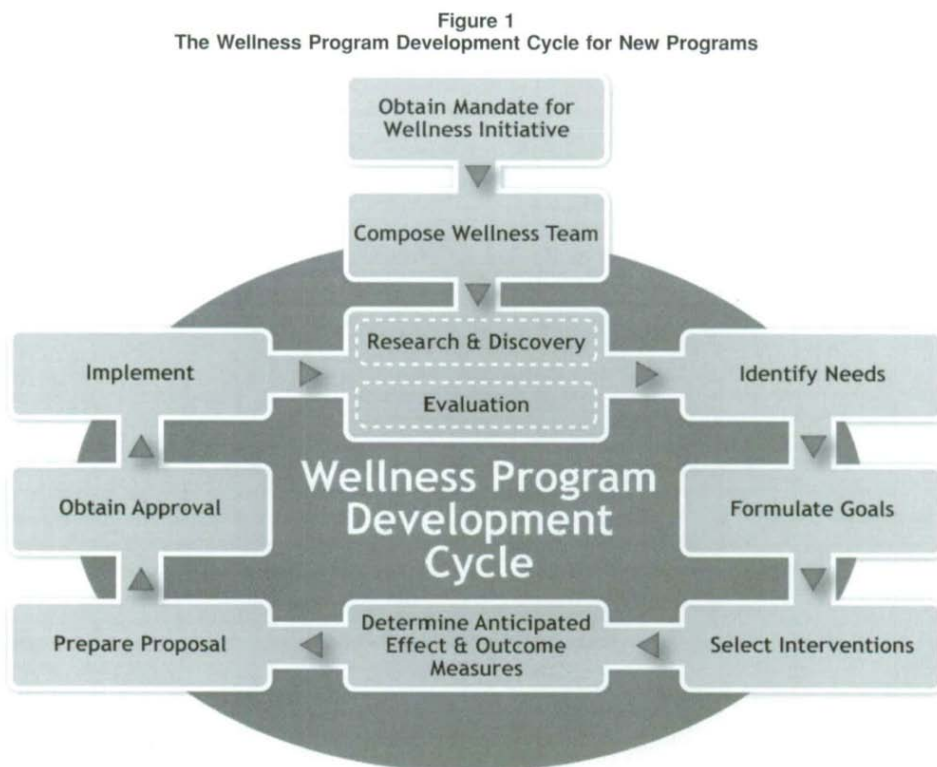


FIGURE 1. THE WELLNESS PROGRAM DEVELOPMENT CYCLE FOR NEW PROGRAMS

Figure 1 republished with permission from the American Journal of Health Promotion

Using this model as a blueprint to build a wellness and health promotion program, the authors describe each of the steps involved in terms of planning.

The first phase of the model is to obtain mandate from upper management for the program itself. Often, the level of support from senior management and mid-level managers will dictate the

success of the program itself and plays an important role in the planning process (Ryan, Chapman, & Rink, 2008).

The second step involves building a wellness team. The roles of the wellness team should be well defined and entail promoting, guiding and supporting the planning process and the program. The article includes a list of recommended participants for new health and wellness promotion program for governmental agencies (see Table 1 below).

TABLE 1. RECOMMENDED PLANNING PROCESS PARTICIPANTS FOR NEW PROGRAMS

Governmental Agencies
Chief human Resources Officer
Benefits Manager
Labor Relations
Employee Relations
EAP Manager
Food Service Manager
Staff Development
Communications
Training
Information Services
Financial Management
General Counsel
Workers Comp
Disability Management
Safety and Security
Wellness Staff
Occupational Health

Once the wellness team is built, the research and discovery process focuses on obtaining and gathering information on the target population and the type of health promotion program that would be the best fit. There are many types of interventions for a multitude of health and wellness topics. A convenient way to learn more about health promotion for a specific industry or occupation is to contact other organizations; ask if they have implemented health and wellness promotion initiatives in the past; and if they were successful.

The next few steps encompass needs identification, goals formulation, interventions selection and determination of effect and outcome measures. The wellness team should use all the resources, internal (i.e. human resources, health insurance provider) and external (i.e. websites, national organizations, workshops), available to them to develop a program that is most likely to be successful and reach the expected results. A few good external resources mentioned by the authors are included in Table 2.

The last steps of the Wellness Program Development Cycle for New Programs consist of preparing a proposal in order to obtain approval, followed by implementation. Too often organizations and health promotion committee put together programs and neglect to evaluate it. The evaluation process should be the last one to be completed after the program has been implemented for a certain period of time. Evaluation is crucial to the planning process as it provides feedback from the participant and data related to costs, participation rates, return on

investment, productivity gains (corporate and for individuals), etc. From this evaluation, the health and wellness promotion team shall determine if their overall program and interventions were successful and where improvement is needed. The table below was included in the article and provides a summary of evaluation plan.

TABLE 2. INFORMATION, TRAINING, AND CONFERENCE RESOURCES

Type of Data/Resources	Source
Data from scientific literature	Medline (www.ncbi.nlm.nih.gov)
Government health data (National Center for Health Statistics)	Center for Disease Control and Prevention (www.cdc.gov/nchs)
State health status and health coverage trends	Kaiser Family Foundation state health facts (www.statehealthfacts.org)
Worksite Wellness Certification	National Wellness Institute (www.nationalwellness.org)
Worksite Wellness Best Practices	Partnership for Prevention (www.prevent.org) WELCOA (www.welcoa.org) WorkLife – NIOSH (http://www.cdc.gov/niosh/worklife/)
Worksite wellness conferences	National Wellness Institute (www.nationalwellness.org) American Journal of Health Promotion National Conference (www.healthpromotionjournal.com) Local and state wellness councils

TABLE 3. SUMMARY OF EVALUATION PLAN

Major Evaluation Question	Evaluation Method
Did the program meet its objectives?	Program goals & objectives
How much program activity actually reached people? How many people participated in the program? How many people completed the program?	Program participation
How did the participants like the program? How did it affect them?	Participant feedback
What improvements in individual health or risk factors occurred?	HRA analysis
What effect did the program have on the organization?	Productivity gains
How did the incentives work?	Incentive performance
How much did the program costs?	Program direct cost
What was the ROI of the program?	Return on investment
What changes should be made to the program for future implementation?	Design recommendations

In another article published in Wellness Perspectives journal, the author identifies four common and basic approaches to health promotion in the workplace: the human resources approach, lifestyle change programs, health care benefits approach, and occupational health and safety approach (Collins, 1991). The human resource approach focuses on selecting, developing, training, cultivating, and evaluating a workforce in a way that hinders good health. The occupational health and safety approach main concern is to “promote health by preventing illness and injury from workplace hazards” (p.31). The lifestyle change approach aims at eliminating unhealthy behavior (i.e. smoking, eating high fat diets) and encouraging healthy ones (i.e. physical activity, stress management). Lifestyle change interventions are designed to address at-

risk behaviors that contribute to poor health and provide activities, educative material, and tools to help employees adopt and maintain healthier habits. The health care benefits approach intends to improve employee health, but also decrease employee healthcare cost. One intervention associated with health care benefits is to offer health screening to employees in order to detect diseases earlier and reduce the cost associated with treatments. Although all four approaches have been successful when applied individually, trends tend to illustrate that a combination of all four create and maintain better results.

Integrating Safety and Fitness in Health Promotion

An article published in Professional Safety Journal describes how to integrate a physical conditioning program into the daily safety routine in order to prevent injuries (Drennan, Ramsey, & Richey, 2006). Due to a significant increase in older workers, U.S. employers experience the impact of an aging workforce. Often, as age increases physical activity decreases and negatively affects flexibility and strength. As a result, older workers, especially those overweight, become more prone to soft tissues injuries (e.g. sprains and strains) and become prime candidates to musculoskeletal disorders (MSDs) such as carpal tunnel syndrome. The authors also indicate how workplace health promotion initiatives are often passive and infrequently successful. Many programs in place are voluntary and result in low participate rate, no measurement or evaluation process, and consequently lead to negligible results. The article stresses the importance of merging occupational safety and health promotion together on the basis that they share the same mission, the same clientele, the same challenges and goals, and possess similar training. According to the authors, the overall definition of health promotion incorporates a safety component. In accordance with this definition, a successful integration must share the following key elements:

- Senior management support
- Positive attitude from supervisors
- Team based systems (from natural workgroups)
- Mandated participation
- Accessibility to the general work population
- Exercises variety and progression
- Concrete progress measurements (fitness)
- Frequent audits and evaluation (supervisors and teams)
- Availability of coaching and support
- Delivery of safety training (during the fitness routine)
- Recognition, accountability, and performance review

Administrative Infrastructure

In his article entitled *Building a Sustainable Administrative Infrastructure for Worksite Wellness Programs*, Larry S. Chapman (Year) defines administrative infrastructure as “the assortment of personnel, roles, responsibilities, policies, procedures, and organizational resources that support and sustain the development, implementation, and evaluation of a wellness program to a population of employees (...) over time (p.2).” Such infrastructure provides support to key components of health promotion programming. Chapman lists 16 key components of administrative infrastructure for a workplace wellness program. Table 4 includes the components and provides a short description of each. Depending on the size of the employee population, a

customized version of the infrastructure, sometime excluding a few components, may be more appropriate.

Health Promotion Program Evaluation Methods

As stated earlier, in order to determine the success rate of workplace health promotion programs, practitioners must implement a comprehensive evaluation framework. Grossmeier, Terry, Cipriotti, and Burtaine (2010) stated that a combination of measures and metrics are essential to appropriately program measure performance and success rate. Below are the different measures the authors judged important to track in any workplace health promotion program:

- Engagement metrics (i.e. initial registration, active participation, program completion);
- Satisfaction metrics (i.e. quality control);
- Health behavior change (i.e. physical activity change, dietary intake, tobacco use, etc.);
- Biometric health and clinical impacts (i.e. blood pressure screening, cholesterol level, weight, body mass index, etc.);
- Population-level health risk reduction;
- Productivity impacts (i.e. days away from work, restricted duty);
- Health care costs impacts (i.e. number of claims, costs of claims); and
- Return on investment (ROI).

The ROI is especially critical in evaluating the success of a program meant not only to improve workers' health, but also improve the financial state of the organization. Although a program generates savings in health care costs and productivity, "the savings may not be substantial enough to yield expected levels of ROI (Grossmeier, Terry, Cipriotti, and Burtaine, p.3, 2010)." The ROI also assists in determining the economic input necessary to sustain the sustainability of the program and ensure that it generates the expected results. Although each metric or measure may be criticized when evaluated alone, when combined they provide more credibility to the ROI. It is also important to remember that evaluation is not only a measure of the past, but also a way to identify what area of the program needs improvement and may lead to better results.

Definition of Terms

To familiarize with the field of health and wellness promotion, it is important to clearly define the basic terms commonly used. Through the literature review, many confounding definitions of similar terms were found and gathered. They were examined and often combined to create the most accurate and explanatory definition possible. The following definitions represent most of the key terms used in regard to health and wellness promotion.

TABLE 4. KEY COMPONENTS OF ADMINISTRATIVE INFRASTRUCTURE OF WELLNESS PROGRAMS

Name of Component	Description
1. Program brand	Name, logo, tag line and graphics used by the Wellness program.
2. Program website	Contains description information about the program and resources.
3. Wellness coordinator or manager	Single individual responsible for developing, implementing, and evaluating the Wellness program.
4. Wellness staff/team	Assist and support the wellness coordinator/manager.
5. Wellness vendors	External vendor(s) that provide various wellness services to the targeted population.
6. Program proposal	The written purpose, mission and proposed activities for the program including budget, economic justification, and proposed timetable.
7. Wellness program design team	Relatively small group used to refine the initial design of the program and proposal for its funding. Typically includes key decision-makers.
8. Wellness advisory group	Group of employees and interested managers/supervisors that act as a sounding board and volunteer pool for selected wellness activities.
9. Wellness program work plan	Annual plan of events and activities that will comprise the wellness program during the year (who, what, how, and when).
10. Wellness program budget	Document that includes estimated and approved expenses and their expected timing for the wellness program activities during the year.
11. Employee wellness network	Network of individuals in all locations and major work units that have an interest in helping implement the program.
12. Ad hoc action team	The short-term teams are responsible for putting on specific wellness activities.
13. Wellness program goals	Set of formal goals that portray the expected purpose of the program.
14. Wellness program objectives	Set of formal objectives that function to guide the program's development and implementation.
15. Email capability	Online communication for members of the target population.
16. Program evaluation plan	Formal evaluation plan describing what will be evaluated and how.

To begin with, health, as the World Health Organization defines it, “is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (1948)”. Yet, many found this definition outdated given that it has not been amended since it came into effect in 1948. Whereas this definition has had its share of critics, its genuine meaning still stands today as it portrays health as a holistic and multidimensional state of well-being (Bracht, 1990). Nowadays, many health promotion professionals depict health as a moving continuum rather than a constant and ideal state to be achieved that all could strive, but which few could attain. Furthermore, health is greatly affected by each individual’s needs and beliefs (social, emotional, physical, spiritual, and psychological), but also by society as we are continually changing as a civilization over time and from one location to another. Too often organizations measure the health of their workforce in terms of absenteeism and the number of workers present, executing their respective duties. However, to fully define the state of health in a given work setting, one must take into account employees who are physically impaired, the worker who came to work despite an acute illness, or the staff member who came back to work

prematurely after a surgery. When considering these factors, *effective and gratifying* work can therefore be a measure of total health within an organization (Felton, 1990).

The World Health Organization defines health promotion as “the process of enabling people to increase control over, and to improve, their health. It moves beyond a focus on individual behavior towards a wide range of social and environmental interventions (1986)”. According to Sloan, Gruman, and Allegrante, health promotion can be defined as “any effort to (1) prevent illness, disease, or premature death through behavioral and organizational change and to (2) increase both the individual and general level of health (1987, p.23).”

As part of health promotion, health education is the sequential development that eventually leads to behavioral change for people that either lacked the motivation to do so or did not have the health knowledge to accomplish it. Health education is selecting meaningful health information; adapting it to the chosen audience; presenting it at a proper time and making it a matter of personal significance as a mean to motivate the learner to behavioral change (Felton, 1990).

METHODS

Telephone Interviews with State DOT Safety Directors

The Mn/DOT Safety Director, based on their professional contact database, provided an initial list of six potential interview subjects. Using an Internet search engine (www.google.com) and reading through state DOT websites, an additional seven potential subjects were contacted via telephone and asked to participate (13 total subjects). If possible, an Email was sent as a follow-up to the phone message. Reaching subjects by telephone proved to be more difficult than originally anticipated, which resulted in fewer interview participants. In some cases, multiple voice messages were left but not returned. After three weeks of intermittent bi-daily attempts to contact subjects, a total of nine interviews were completed, which resulted in a 69% participation rate.

The interview questions were developed based on the objectives of the research project, namely:

1. What is their definition of health promotion?
2. What is their definition of wellness program?
3. Are they currently administering any health promotion or wellness initiatives?
 - a. How long have the initiatives been operating?
 - b. Who are the initiatives targeting?
 - c. What lead to the inception of the initiative?
 - d. Are measures being monitored for effectiveness?
4. Were they involved with any health promotion or wellness initiatives in the past?
 - a. What were the initiatives and how did they perform?
5. What would they recommend to reduce the likelihood of over-exertion or strain injuries in road workers, field personnel, or maintenance technicians?
6. What is the size of their workforce? Specifically the field personnel.
7. What is their top three injury concerns, what are they doing to reduce injury occurrence?

Depending on individual subject responses, some additional probing questions were used. For example, for responses concerning any current health promotion and wellness initiatives, the subject may have been asked about encountered barriers and how they dealt with those barriers.

For subjects reached during the initial telephone call, the interviewer introduced him/herself and provided a brief overview of the research project before asking to schedule a date and time for the phone interview. For a scheduled interview, or when the subject indicated they had immediate availability, the subject was asked for permission to voice record the interview for ease of interview and documentation. Although no human subject protection was required for this study, the subject was assured that all personal identifiers would be removed from the transcription and the voice recording would be erased. A handheld Olympus microcassette recorder was used along with a Nortel Networks speakerphone (standard in UMD faculty office equipment). The telephone interviews lasted between 5-15 minutes, depending on the length of responses from the subjects. After the interview, the subject was thanked for their participation and the recording was terminated. The graduate research assistant performed all interview transcription into Microsoft Word documents.

It is important to note, in most cases, a few subjects had additional questions after the interview. The most frequent question regarded their interest in the results of this study. Therefore for all telephone interview subjects, a draft copy of this report will be provided for their review and comments. Depending on the timing and quality of report review comments, this data may be discussed at the end of the final report.

Telephone Interviews with State of Minnesota Health Promotion Expert

The Mn/DOT Safety Director provided the name of a contact in the Minnesota Department of Management and Budget. An Email sent to this individual yielded a contact that directs health promotion and wellness activities for a variety of Minnesota government agencies, include Mn/DOT. This individual's name is being withheld for privacy of their statements.

The interview questions were a combination of items of interest relating to the original study's literature review and questions posed to the DOT Safety Directors. Essentially, the health promotion and wellness expert was asked:

1. What is your definition of health promotion?
2. What is your definition of a wellness program, if there is a difference?
3. What do you regard as the top resources for the field of health promotion and wellness?
4. What is your background in health promotion and wellness, such as degrees, licensure, and certification
5. What health promotion and wellness initiatives are you currently working on?
 - a. Who are those initiatives targeting?
 - b. How long have they been in operation?
 - c. Are you monitoring changes and/or results? What measures?
6. What health promotion and wellness initiatives did you operate in the past, and what were their outcomes?
7. Do you have any data or measures to show cost effectiveness or return on investment?
8. What would you recommend for health promotion and wellness initiatives to reduce the likelihood of over-exertion or strain injuries in laborious field workers?

The health promotion and wellness expert agreed to have the telephone interview recorded, and the graduate research assistant transcribed the recording into a Microsoft Word document.

Interview Data Analysis

The transcribed interview text was entered into a Microsoft Excel spreadsheet, and groups of responses were sorted and moved to their own spreadsheet tab for analysis. Three sets of questions were separated: definitions, top injuries and efforts, and health promotion and wellness initiatives information. For each response (column), the text was evaluated and reduced to a phrase or represented subject term or terms. The creation of a field of subject terms allowed for a quantitative representation to be counted. Although only nine entries equates to the total, a count of 5 or more constitutes a majority and 3-4 common response constitutes an interesting finding. The general taxonomy of the responses was also evaluated for similarities and unique responses. During several interviews, the subject volunteered additional information that did not directly fall under a question heading; such as barriers experienced while administering a health

promotion initiative. These unique responses were concentrated for reporting to support the other data analyses.

RESULTS

Telephone Interview Results

A total of nine interviews were conducted with state DOT Safety Directors (or someone assigned employee safety and health responsibility). The size of field worker populations ranged from 400 to 8,500 per DOT program. Breaking down the subjects into three groups, there were 4 “smaller” agencies (under 1000 field workers), 3 “medium” agencies (1000-2000 field workers) and 2 large agencies (> 5000 field workers).

Definition of Health Promotion and Wellness

Overall, responses indicated that the terms health promotion and wellness were interchangeable and typically represented some form of educational program for healthy eating (diet) and fitness (exercise and stretching). A representative statement of health promotion from one of the medium-sized agencies was:

“The way we are using it is to provide information to employees about how to improve nutrition, fitness, wellness, etc.”

A statement by one of the large agencies encompassed a little bit of all the other responses for definition of a wellness program:

“A wellness program is more that contributes to diet, to fitness, to exercise, and generally changes behaviors that result in better medical health for the employees.”

In addition to these responses, one-third of the subjects indicated that health promotion and/or wellness programs also include a form of incentive to encourage worker participation. As a measure of comparison, the expert provided the following definition for health promotion:

“A healthy work environment is a workplace where everything an employee or visitor sees, tastes, touches, hears, and feels supports their intentions to be healthy. Health promotion is also relationships between supervisors and their staff. If the relationship is unhealthy, employees are not driven to give beyond the minimum required and feel dissatisfied by work. This affects their overall sense of wellbeing.”

The expert provided the following definition for wellness:

“A wellness program would be one that supports the healthy intentions of all employees. I like to look beyond programs and look at the entire workplace system. Rather than focus on a ‘program’, which might bring short-term changes, I consider worksite wellness an employee benefit. The benefit manager must focus on the social, physical and policy environments and how they can best support day-to-day living in a healthy worksite.”

Current Health Promotion and Wellness Initiatives

All the interview subjects indicated either having current or past experience with health promotion and wellness initiatives. An interesting trend emerged when the responses were sorted by size of agency. A summary of these responses is indicated in Table 5.

TABLE 5. HEALTH PROMOTION AND WELLNESS INITIATIVES BY SIZE OF AGENCY

Group Size	Types of Initiatives	Performance Measures
Smaller	Primarily educational, non-formal. Incentive for health screening	None
Medium	Formal programs: stretching, exercise, walking, and education	Nothing formal or still working on it
Large	Formal program, committees, worker input, management commitment	Participation, lost workdays, WC costs

Two respondents commented on barriers encountered while administering their health promotion and wellness initiatives. Following are responses regarding barriers to success:

1. *“We are still hitting many types of barriers. The first one is management reluctance to push the program and, therefore, it’s completely voluntary. What ends up happening here it that we get one maintenance crew to jump on board and do the program for a little bit, but eventually they get bored and without a push from management they just drop it.”*
2. *“I don’t think there are issues with management buy-ins. I think the reason a lot of them are focused on safety is because senior management understand the benefits of safety and understand that it saves money if done right. I think two things that are pitfalls or hurdles are (one) the level of education within our workforce. Some of them don’t have college education or some not even beyond high school education. Also part of the culture is teaching the mindset that it’s not just important to the employee, but it’s important to the department. It’s an education thing on that end. The second one is time. I find myself lacking the time to go out and do it as well. We are all busy. We are working 8-10-12 hours a day and when we get home the last thing we want to do is think about doing stuff for work again. I think a lot of things can be hurdles or pitfalls, but you have to keep and stay on it.”*

The expert was also asked about the types of health promotion and wellness initiatives they are currently administering. Following are responses to what they said:

“Each month I convene the team of ‘Agency Wellness Champions.’ Most of the state agencies have wellness committees and several people from each of those internal committees represent their agency on this team. Through these meetings and a website, we share resources, ideas, programs and strategies—we’re maximizing limited resources. Within those meetings I provide technical support. While the various wellness committees are implementing programs, I also keep their focus on building a wellness infrastructure within their agencies. I work on that myself as well, by building

relationships and ‘buy-in’ from our human resources directors, our unions, our facilities managers, our policy-makers and our commissioners. We have ample support from employees. I try to build stronger support from state leaders by providing them with the evidence they need that a healthy state workforce is an engaged, productive workforce. I have spent a lot of the last two years focused on safety and risk management. Basically, I try to build the ground underneath the feet of the state agencies’ programs.”

The expert then commented on performance measures for health promotion and wellness initiatives:

“Each year each agency participates in an environment assessment, which captures information on the physical environment, workplace culture and policies. This summer we are looking more closely and making recommendations for improving the eating environments in our state agencies. We use our health assessment data to drive our decisions. We track participation in events and are getting more used to implementing follow-up surveys. We also have a great deal of qualitative evaluation. I would like to be able dig a bit deeper into our health assessment and claims data. Our assessment contains a measure of productivity loss due to poor health, which we hope to see improvement in year over year. There is deep hesitation to break this data out by agency due to the need for data security. So far this concern outweighs the possible rewards of such evaluation. The industry rule-of-thumb for ROI is a 3-6 to 1.”

So there appears to be commonalities between the larger agency’s health promotion and wellness initiatives and those described by the expert.

Top Three Injury Concerns and Solutions for Field Workers

There were no trends or similarities when responses were sorted by size of agency. A majority of respondents indicate over-exertion or back injury as their primary concern, followed by slips, trips, and falls. The third concern varied from sprain/strain of upper or lower body to hearing loss or eye protection concerns. For reducing over-exertion and back injury concerns, subjects reported a variety of responses ranging from education (safety lifting, pre-shift stretching or exercises) to “fit for work” policies (or specific hiring of well-fit workers) to “no-lift policies” (or hiring-out ‘riskier’ work). For dealing with slips/trips/falls, subjects reported education and proper selection and use of footwear.

All subjects were asked what they believe would be the best approach to reducing musculoskeletal disorders and back injuries in field workers. Again, the responses were not similar within agency size groups. There were no majority agreements on a particular effort to reduce MSD/back injuries. Basically, responses ranged from stretching and training on safe lifting practices to no-lift policies and re-engineering the work to eliminate lifting. All respondents indicated concern on how to deal with this issue.

DISCUSSION

The objective of this study was to develop a better understanding of the concepts of health promotion and wellness (HP&W), specifically targeting initiatives for DOT fieldwork, to produce a reference manual for Mn/DOT managers. The first approach entailed a literature review of journals, textbooks, and Internet resources. The World Health Organization defines health promotion as “the process of enabling people to increase control over, and to improve, their health. It moves beyond a focus on individual behavior towards a wide range of social and environmental interventions.” Whereas the state of Minnesota expert indicated, “Health promotion is also (about the) relationships between supervisors and their staff. If the relationship is unhealthy, employees are not driven to give beyond the minimum required and feel dissatisfied by work. This affects their overall sense of wellbeing.” Both of these definitions support the intention to empower the worker to take control of their own health, which can be fostered through programs and initiatives at work. Although most literature and reference material focus on a localized and somewhat sedentary workforce, some of the key success factors can be extrapolated to the unique environment of field workers.

The literature review indicated that health promotion and wellness is a more of a process as opposed to simple initiative or program. Figure 1 shows the construct for that process. In order to be successful, health promotion and wellness requires well-intended planning using a team or committee approach. The State of Minnesota HP&W expert indicated that she already assists Mn/DOT with their wellness committee, but that it’s limited to the corporate office and therefore to the employees housed within that building. Both the literature review and telephone interviews support the requirement for true management commitment/leadership and real employee involvement/participation. Management commitment begins with resources for the HP&W effort, and continues with support through visual recognition so workers realize the importance. Employee involvement is part representation on the planning committee for HP&W but also participation in the HP&W efforts. Employees need to view HP&W as an investment in themselves and in their family. HP&W is not a stretching or exercise initiative, or educational sessions on diet and nutrition. Choi & Woletz (2010) found that stretching and exercises programs alone do not show benefits, but as part of a comprehensive plan it does. HP&W is a workplace commitment to healthier choices and an overall healthier outlook on life. As stated by the Minnesota expert, it’s also about healthy relationships in the workplace. This is not a radical new idea, but it is a tremendous amount of work. Layer on top of this a mobile and remote work population, and the complexity of the issue makes it appear daunting. Several non-Minnesota DOT programs provide monetary incentives to workers to increase participation, which may be an option because the individual may not immediately perceive the health and wellness improvements and it is important for participants to remain motivated and involved in the program. This is a decision senior management and the HP&W committee may need to address.

The health promotion and wellness process begins with careful planning and defining the needs and goals of the workers. A committee should be assembled that consists of worker and management representatives, an HP&W expert, and representatives from other stakeholders (e.g., healthcare provider, workers compensation, senior Mn/DOT management). The establishment of this committee also demonstrates commitment by Mn/DOT management. In planning the HP&W, the committee should define how it aligns with the goals, objectives, and

priorities of Mn/DOT, and their basic philosophy of how their efforts will affect the daily lives of their constituency. The committee needs to decide on the different HP&W initiatives that best meet the needs and goals of workers, and how progress will be measured and assessed. One issue noted from the telephone interviews was a lack of HP&W measures to establish and monitor progress. Participation is an initial measure, but not a long term or performance measure. As stated by the HP&W expert, they also collect qualitative data from participants about how they *feel* and what they perceive about benefits or improvements in their wellness status. The committee should be able to define measures (and a data collection methodology) that could be incorporated with other Mn/DOT performance measures, and help to show wellness improvement and cost savings.

In conclusion, health promotion and wellness is a process and mindset that should be adopted into the culture of an organization. Management commitment and employee involvement is critical, and begins with the formation of a well-represented HP&W committee. The primary objectives of the committee is to plan how HP&W can align itself with the goals, policies, and measures of the organization, and study the needs of the workers. The HP&W message to workers should be consistent and understandable. Successful HP&W plans are not limited to stretching sessions or lunch bag seminars on diet; it's much more than that. HP&W is about healthy work relationships, a commitment and support for healthier life choices, and making healthier lifestyles an achievable goal. The HP&W community indicates that employers can expect a three to six times return on their investment, and those measures should be defined and collected to show value to Mn/DOT stakeholders.

Study Limitations

The literature review attempted to identify reliable health promotion and wellness literature resources targeting construction-related or field-type work. Most research in this area is directed toward office and manufacturing environments, therefore some extrapolation of concepts and ideas were made for this paper. The authors would caution Mn/DOT that there might be unknown barriers to developing and implementing a successful HP&W program for field workers.

The telephone interviews with non-Minnesota DOT safety staff were limited by the availability of contact information and subject willingness to participate. It was also apparent during interviews that although safety staff was involved in HP&W program activities, they may not have been the source or sole manager of those programs. The goal of this study was to gain an understanding of HP&W from the perspective of safety staff and the responses collected met that goal. It is important that Mn/DOT safety staff realize the need for a HP&W expert on their team as they begin discussions about how to proceed from here. .

The telephone interview with the Minnesota HP&W expert was very informative and should be a valuable resource for Mn/DOT management in pursuit of a HP&W plan. However, based on responses from non-Minnesota DOT safety staff, they also had involvement of their health insurance/healthcare providers, workers compensation offices, and even the governor's office. Therefore the authors recommend that Mn/DOT attempt to gain support and involvement from other entities outside of their agency. The state of Minnesota, Mn/DOT workers compensation, and Mn/DOT health insurance/healthcare providers all stand to benefit from a well-designed and administered HP&W program. Therefore their involvement is needed.

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